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Description

Help system, automation device with a help system and a method
for providing help data

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The invention relates to a help system according to the prea m-
ble of claim 1. The invention further relates to an automation
device with a help system of this type and a method for provid-
ing help data.

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Software, automation devices containing software and software
for the programming and/or configuration of automation systems
are becoming increasingly more complex for users. Help systems
are provided to support the user whilst handling software
15 and/or an automation device. Help systems of this type are
typically a part of the software and are delivered together
with the software. The software is installed with help systems
of this type onto a data processing device, the help system
then being locally available and/or on a network drive on this
20 data processing device. The result is that the help data pro-
vided in a help system of this type is very static and is not
updated until a new version of the software is installed. If on
the other hand the user requires help data and/or information
which is not contained in the help system delivered together
25 with the software, the user must research databases provided
via the internet for additional help data and/or information
for example. The user must thus operate two different systems
and search for help data separately in both systems.

30 It is known from the prior art that a help system delivered t o-
gether with a software installed locally on a data processing
device features branches or exits into the internet. The user
is thereby able to branch onto a help system available online,

starting from the help system installed locally on the data
processing device and available offline. However help systems
which are available online and offline are not integrated. This
means that according to the prior art, the user only branches

5   to a general start page of an individual predefined homepage of
a help system available online. In this help system available
online, the user must once again separately search for the neces-
sary help data. This is extremely time-consuming.

10   When the term help data is used below, this should be under-
stood to include all data required by the user to solve a con-
crete problem. This can be data which relates to the software
as such. If the software is automation software for example
which is installed in an automation device or is programmed or

15   configured with said automation device, this help data can also
be information about the automation environment. By way of ex-
ample, data and/or information about components of the automa-
tion device can be provided as help data. Help data can thus
be information provided from different data sources of the

20   automation environment. Help systems of this type could thus
also be referred to as information systems.

The problem addressed by the present invention is therefore to
create an innovative help system, an innovative automation de-

25   vice with a help system and an innovative method for providing
help data.

This problem is solved by further development of the help sys-
tem mentioned at the start with the features of the character-

30   izing part of claim 1.

The help system according to the invention comprises a first
help facility which is preferably installed as a part of an ap-

plication on a data processing device, in which the first help
facility provides a user with help data on the basis of context
data defined by the user, in particular on the basis of search
terms, said help data being stored in the first help facility

5   and thus on the data processing device. The search terms are
produced for example by the components used, current processing
steps, the workflow, the current positioning in the first help
facility and/or explicit search terms. The context data can be
automatically deduced and be supplemented by the user if neces-

10   sary. In accordance with the invention, the help facility fur-
ther comprises a second help facility, which is accessed by the
data processing device preferably via the internet such that
the context data defined by the user in connection with the
first help facility is automatically adopted in the second help

15   facility as context data, in which the second help facility
provides the user with additional help data based on this con-
text data, said help data being stored in the second help fa-
cility. For the purpose of the invention, a static offline help
facility is rendered dynamic by means of a link with an online

20   help facility. The adoption of the context data generated in
connection with the offline help facility for the online help
facility facilitates and accelerates the provision of the help
data. A seamless integration of the second help facility into
the first help facility is possible.

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According to an advantageous embodiment of the invention, the
additional help data provided by the second help facility is
stored on the second help facility such that the additional
help is supplemented by metadata, the metadata defining the

30   context in which the respective additional help data is rele-
vant. This allows additional help data to be located in a par-
ticularly simple and rapid manner.

The automation device according to the invention is defined in claim 15 and the method according to the invention to provide help data is defined in claim 16.

5   Preferred developments of the invention are set down in the subclaims and the description below.

A preferred exemplary embodiment of the invention is described in more detail below with reference to the drawing, in which:

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Figure 1   shows a greatly simplified block diagram of the help system according to the invention

A help system according to the invention is described in detail
15   below with reference to Fig. 1. Fig. 1 shows a help system 1, which comprises a first help facility 2, which is installed on a data processing device 3 as a part of a software and/or application. The first help facility 2 is thus a help facility which is delivered as part of a software together with the
20   software and is installed on the data processing device 3. In the event that a user requires help data in order to answer a question or a problem which arises, the user enters search terms by means of an input device 4 for example in order to find help data in the first help facility 2. By doing this the
25   user thus generates context data, said context data corresponding to the problem posed to the user, and which the user would like to solve by using the first help facility 2. One example could be the question regarding possible cycle times of an automation system. The context data is thereby covered by a
30   current processing step (e.g. plugging in a component), the components used (e.g. identification of the component) and the inputting of further search functions (e.g. querying the cycle time).

The first help facility 2 which is installed on the data proc-
essing device 3 is an offline help facility. This is supplied
together with a software and contains information which corre-
5   sponds to the currency of the software and/or application in-
stalled on the data processing device 3.

For the purpose of the invention, a second help facility 5 is
to be integrated into the help facility 1 according to the in-
10 vention, in addition to the first help facility 2. The second
help facility 5 is configured as an online help facility and
contains day-to-day information and/or help data. The data
processing device 3, on which is installed the first help fa-
cility 2, accesses the second help facility 5 such that gener-
15 ated context data is automatically transferred as context data
for the search in the second help facility 5 in connection with
the first help facility 2. On the basis of this context data,
the second help facility 5 provides the user and/or data proc-
essing device 3 with additional help data. Accordingly in the
20 context of the invention, the context data generated in conj-
unction with the use of an offline help facility is automati-
cally to be used for an extended search in an online help fa-
cility. The direct consequence is that the user of the help fa-
cility according to the invention must generate the context
25 data only once, namely with use of an offline help facility 2,
in an implicit or explicit manner. The context data defined in
this way is automatically further used for the online help fa-
cility 5. The help facility 1 according to the invention is
hereby made dynamic. In contrast to the static help systems ac-
30 cording to the prior art which are self-contained, the present
invention allows for the integration of further information
sources. Up-to-the-minute help data and/or information can be

integrated into the help system 1 according to the invention in
a seamless manner.

The context data generated using the first help facility 2 is
5   stored in a storage device 6 as so-called links, said storage
device 6 being integrated in the data processing device 3.
These links can also be referred to as extension links. The
second help facility 5 can be activated via these links. The
links use the context data and pass it on to the second help
10   facility 5. The use of this context data allows additional help
data to be determined in the second help facility 5, which the
second help facility 5 transfers to the data processing device
3. The second help facility 5, that is the online help facil-
ity, is integrated into the first help facility 2, that is the
15   offline help facility from the offline help facility.

It should be noted in relation to the context data, that the
context data does not merely comprise the search terms, which
were used by the user in connection with the first help facil-
20   ity 2, but also comprises additional data going beyond this fa-
cility. The context data thus also comprises data about the
current version of the first help facility 2. Accordingly the
version of the first help facility 2 must be identified for an
efficient search in the second help facility 5. It is thus
25 . possible with the second help facility 5, namely the online
help facility to implement a mapping of context subdata and to
provide information suited to the real context.

The first help facility 2 and/or the data processing device 3,
30   on which the first help facility 2 is installed, preferably ac-
cesses the second help facility 5 by way of an internet data
connection. Figure 1 shows a so-called Web server 7, which can
be accessed by the data processing device 3 via an internet

data connection 8 and which ultimately determines and compiles
the additional help data in the second help facility 5.

The additional online help data provided by the second help fa-
5   cility 5, that is the online help facility, is visualized for
the user in a display device together with the offline help
data provided by the first help facility, in other words the
offline help facility. This allows the user to proceed in two
different ways.
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According to a first embodiment, the additional help data pro-
vided by the second help facility 5 is directly displayed. In
this case, the Web server 7 provides the determined, additional
help data directly for a display, for example in the form of
15 documents or Web pages containing the corresponding additional
help data. Finished or dynamically-generated pages can be pro-
vided here. The display device assigned to the data processing
device 3 and/or the first help facility 2 displays these pages
directly.
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According to a second alternative, the Web server 7 does not
prepare the additional help data determined in the second help
facility 5 for a display, but instead leaves the preparation of
the additional help data to the first help facility 2 and/or
25 the data processing device 3, on which the first help facility
2 is installed. The first help facility 2 can influence the
manner in which the additional help data is to be displayed.
In this case, the Web server 7 provides a so-called XML Web
server for the transmission of the additional help data which
30 was determined in the second help facility 5. The XML Web
server provides XML Web services which supply the additional
help data. The first help facility 2 defines the additional
help information to be determined in the first help facility 2

by way of the context data on the one hand and on the other
hand the mode in which the additional help data should be
transmitted. The first help facility 2 thus uses the addi-
tional help data provided by the Web server 7 and prepares the

5   data for display.

The additional help data can be determined on the second help
facility 5 by a search being conducted for search terms based
on the context data defined in connection with the first help

10 facility 2. This is particularly useful if the determination
of the additional help data requires a full-text search.

For the purpose of the present invention the additional help
data provided by the second help facility 5 is stored on the

15 second help facility 5 such that the additional help data is
supplemented by metadata. The metadata specifies the context
to which the help information belongs and/or the context for
which help information is relevant. The metadata is thus pref-
erably used to determine relevant, additional help data.

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In this case, the context data which was generated in connec-
tion with the first help facility 2 is therefore used, in order
to determine additional help data relevant to the respective
context data, based on metadata which is used for the struc-

25 tured management and/or storage of the additional help data on
the second help facility. The additional help data can thus
originate from different data sources and areas of a company,
for example production, production preparation, production
planning, documentation or customer support. This additional

30 help data is stored in a structured manner on the second help
facility 5, in order to provide the second help data which
originates accordingly from different data sources.

In this connection it is worth noting that it is also within
the spirit of the present invention for additional help data to
be stored in a structured manner on the second help facility 5
such that the storage of the additional help data conforms to
5   the information requirements of a user, which results for exam-
ple from the processing of a complex automation problem in the
so-called workflow of the user. Certain help data is required
by a user at different points in time. A user thus requires for
example completely different help data at different phases of a
10   design process. This can comprise documentation data, update
data at specific components, marketing data, maintenance data
or customer support data. Different data sources must be int e-
grated in order to consider all the different help data.

15   It is thus within the spirit of the present invention to store
the additional help data on the second help facility 5 in r e-
structured or aligned form. The storage and/or preparation of
the additional help data on the second help facility 5 are
adapted accordingly to the workflow of the user and the prob-
20   lems resulting/arising from the workflow. The structured stor-
age of the additional help data via the metadata takes into
consideration the time at which the user requires the add i-
tional help data in the workflow. The storage of the add i-
tional help data is accordingly adapted to the requirements of
25   the user in order to provide help data at the right point in
time. A particularly fast and efficient provision of relevant,
additional help data is possible here.

The additional help data is thus preferably provided and incor-
30   porated such that access is made to a Webserver 7 by way of the
internet data connection 8, said Web server 7 determining the
additional help data relevant in the second help facility 5 and
delivering this to the data processing device 3 by means of the

internet data connection 8, the first help facility 2 being installed on said data processing device. The provision and integration of the additional help data does nevertheless not necessarily have place via an internet data connection and/or Web

5   server. The additional help data can also be available on a local computer, on which the data is stored. It is also possible to provide the additional help data on a storage medium, such as a CD or DVD for example and to dynamically integrate it into the first help facility 2. Furthermore it is possible for

10   several Web servers 7 to be present, these being used to provide the additional help data.

Furthermore, it is within the spirit of the present invention to store and/or save the additional help data provided by the

15   second help facility 5 in the storage device 6 of the data processing device 3. It is thereby possible to successively supplement the first help facility 2, i.e. the offline help facility, which is installed on the data processing device 3 by the additional help data which has been accessed. This type of

20   additional help data which has thus been accessed once is also available offline. It is possible to characterize the additional help data stored subsequently on the data processing device 3 such that a user is able to recognize that on the one hand this is a case of help data stored subsequently and that

25   it is possible to identify on the other hand at which point in time this additional help data was stored and from which data source it originated. This data is available offline and can be explicitly or implicitly tested for currency if a connection exists to the online help facility.

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An additional aspect of the present invention is in the intermediate storage of the context data defined in connection with the first help facility 2 on the storage device 6. If for exam-

ple the data processing device 2, which can be configured as a
mobile laptop for instance, is used in surroundings in which no
online access is available, the second help facility 5 can not
be activated. The context data determined using the first help

5   facility 2 is stored however in the storage device 6 so that if
an online access is available once again, the additional help
data is determined in the second help facility 5. If the data
processing device 3 determines for example that an online ac-
cess is available, it is thus within the spirit of the inven-

10   tion to preferably automatically activate the second help fa-
cility 5 and to use the context data intermediately stored in
the storage device 6 to search for the relevant additional help
data. A semi-automatic activation initiated by the user is also
possible.

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Within the spirit of the invention a help system is proposed
which combines an offline help facility with an online help fa-
cility thereby providing for a dynamization of the offline help
facility. The determination of additional help data in the

20   online help facility is effected using context data which was
generated by the user in connection with the offline help fa-
cility. In this way, additional relevant help data is explic-
itly searched in the online help facility without the user hav-
ing to re-execute search steps. Instead, the search steps car-

25   ried out in connection with the offline help facility and the
context data generated thereby are also used automatically in
the online help facility. This enables help data available
later to be integrated seamlessly into the help system. In this
way a simple update of the offline help facility is possible.

30   The user does not have to switch between different applications
during the search for relevant help data. The navigation in the
different help facilities is adopted automatically by the help
system according to the invention. An automatic, retrospective

and dynamic expansion of the help system according to the in-
vention is thereby possible by means of up-to-date help data.

The help system according to the invention can be used in dif-
5   ferent areas. It is thus suited in particular to use in the
field of technical support and automation technology. It ap-
plies here to providing up-to-date current technical informa-
tion and experience for technical issues and solution possi-
bilities and to integrate them into the help system according
10   to the invention. The most up-to-date specific help data is
then transmitted to the user. Furthermore, the use of the help
system according to the invention provides so-called presales
information. Help data also exists in the presales area which
can be made available to the user in a context-dependent man-
15   ner. Slides, brochures, product data bases, short descriptions
and or parts of this document can be known as examples of help
data of this type. The invention can also be used in the area
of the product marketing.

20   It is also possible to provide help data in a user-dependent
manner. Thus, special user groups are defined with the help of
metadata, by means of which the additional help data is stored
in the second storage device 5 in a structured manner. Other
help data is significant for a manager for example, as for a
25   commissioning engineer, maintenance engineer or programmer. The
additional help data can be made available not only in a con-
text-dependent manner, but also on a role-dependent basis.